

09726663 as of 1/28/03

1. (CURRENTLY AMENDED) A stacked-gate flash memory cell having a floating Poly-Si gate with multiply connected surfaces of individual shapes comprising:
a semiconductor substrate having an active area;
a floating Poly-Si gate with a bottom surface and a multiply connected top surface;
said bottom surface being flat and overlying said active area;
said multiply connected top surface overlying said bottom surface; said multiply connected top surface being defined by multiple regions of individual cross-sectional shapes, wherein the area of said multiply connected top surface overlying said active area is greater than the area of said bottom surface;
wherein said individual cross-sectional shapes are selected from a group consisting of rectangular, trapezoidal and triangular shapes;
a conformal inter-poly dielectric layer replicating said individual cross-sectional shapes over said floating Poly-Si gate; and a conformal Poly-Si control gate replicating said said individual cross-sectional shapes over said inter-poly dielectric layer.
2. A stacked-gate flash memory cell of claim 1, wherein said floating Poly-Si gate has a thickness between about 1900 to 2100 Å.
3. (CURRENTLY AMENDED) A stacked-gate flash memory cell of claim 1, wherein said regions of individual cross-sectional shapes have a depth between about 900 to 1000 Å.
- ~~4. A stacked-gate flash memory cell of claim 1, wherein said different shapes are rectangular and triangular.~~
5. A stacked-gate flash memory cell of claim 1, wherein said inter-poly dielectric layer is oxide-nitride-oxide having a thickness between about 150 to 250 Å.
6. A stacked-gate flash memory cell of claim 1, wherein said Poly-Si control gate has a thickness between about 1500 to 2000 Å.